

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

VARTA MICROBATTERY GMBH,

*Plaintiff,*

v.

GUANGDONG MIC-POWER NEW  
ENERGY CO., LTD.,

*Defendant,*

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AUDIO PARTNERSHIP LLC and AUDIO  
PARTNERSHIP PLC d/b/a CAMBRIDGE  
AUDIO,

*Defendants,*

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PEAG, LLC d/b/a JLAB AUDIO,

*Defendant.*

NO. 2:21-CV-00036-JRG  
[LEAD CASE]

NO. 2:21-CV-00037-JRG  
[MEMBER CASE]

NO. 2:21-CV-00038-JRG  
[MEMBER CASE]

**CLAIM CONSTRUCTION OPINION AND ORDER**

In these consolidated patent cases, Plaintiff VARTA Microbattery GmbH (“Plaintiff” or “VARTA”) asserts claims from U.S. Patent No. 10,804,506 (the “’506 Patent”) against Defendants Guangdong Mic-Power New Energy Co., Ltd. (“Mic-Power”), Audio Partnership LLC, Audio Partnership PLC d/b/a Cambridge Audio (“Cambridge”), and PEAG, LLC d/b/a JLab Audio (“JLab”) (collectively, “Defendants”).<sup>1</sup> The ’506 Patent relates to button cells, which are small

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<sup>1</sup> VARTA also asserts United States Patent Nos. 9,153,835; 9,496,581; 9,799,858; 9,799,913 against Mic-Power only, and terms from asserted claims of those patents were briefed and presented for construction. (See Dkt. Nos. 64, 65,

batteries that might be found in, for example, watches or portable electronics. *See* '506 Patent at [54] (“Button Cell Having Winding Electrode and Method for the Production Thereof”); *id.* at 1:18–21 (noting that the disclosure relates to button cells with a wound electrode separator assembly and a method for production).

The parties dispute the scope of four claim terms. Having considered the parties’ briefing and arguments of counsel during a January 11, 2022 hearing, the Court resolves the disputes as follows.

## I. BACKGROUND

The '506 Patent describes conventional button cells as consisting of two housing halves—a cup and a top—that contain stacks of electrode layers. '506 Patent at 1:25–33; *id.* at 2:8. These housing halves are held together either by crimping the edge of the cup over the edge of the top, or with a force-fit connection. *Id.* at 1:34–40; *see also id.* at 1:42–44. However, force-fit connections are more susceptible to internal stresses in the axial direction than crimped connections, such as those that might result from volume changes to the electrodes during charging and discharging.

*Id.* at 1:47–58.

To address this problem, some button cells have a spiral-shaped electrode winding connected to the housing halves with conductors. Typically, producing these types of button cells consists of unwinding electrode “strips” from a mandrel, which leaves an axial cavity at the center of the winding. With this arrangement, any volume changes in the electrodes results primarily in

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68). However, the Patent Trial and Appeal Board (“PTAB”) issued Final Written Decisions on January 5, 2022 with respect to those four patents, finding all original claims unpatentable. (Dkt. No. 74). Rather than cancelling the claims outright, the PTAB granted VARTA’s motions to amend as to “essentially all claims,” finding such amended claims patentable over the asserted prior art. (*Id.* at 2). VARTA continues to assess the impact of the PTAB’s decisions on its claims in this action, and thus the Court carried construction of those disputed terms until such determination has been made.

radial (rather than axial) forces. However, because of how the electrodes are typically arranged, those radial forces are more likely than axial forces to disrupt the contact of the electrodes with the metal housings. *See generally id.* at 1:49–2:22.

The '506 Patent purports to solve this electrical-contact problem by welding the housing halves to internal conductors from outside the housing. Prior-art button cells might also have conductors welded to the housing halves, but the welds are made before the housing is assembled, which the patent describes as “difficult to achieve” and “very elaborate in terms of production technology.” *Id.* at 4:61; *id.* at 6:12–14. In contrast, welding after assembling the housing halves “has great advantages in terms of production technology.” *Id.* at 4:66–67.

Figures 1A and 1B (below) of the patent show cross sections of a preferred example of a button cell made according to this process. *Id.* at 3:21–22. The button cell (100) has a metal cup part (101) and a metal top part (102) that together form a closed housing with planar and parallel top and bottom regions (104, 105). The lateral surfaces of the cup and top overlap to close the housing by a force-fit connection in an overlap region (106). *See generally id.* at 7:18–31.

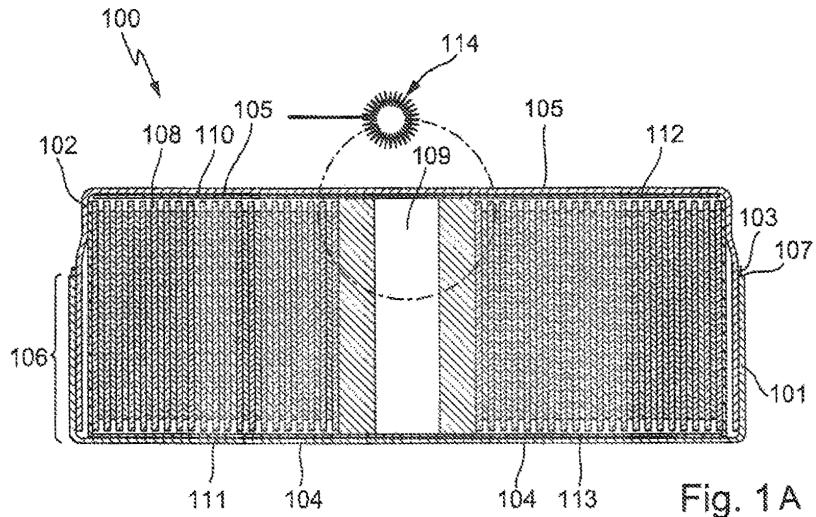


Fig. 1A

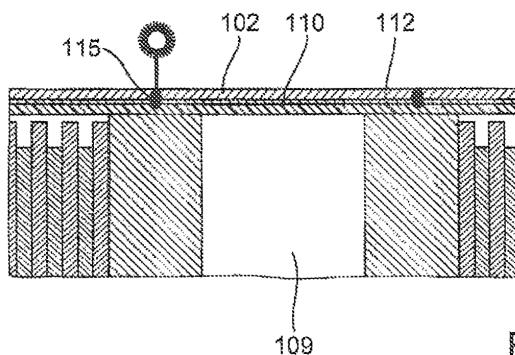


Fig. 1B

The housing contains a spiral-shaped assembly (108) of electrodes and separators. The assembly is wound on a winding core (109), which is a hollow plastic cylinder that partially fills an axial cavity at the winding's center. The cavity is "delimited laterally by the winding and upward and downward by corresponding circular sections of the plane cup and top regions of the button cell housing." *Id.* at 7:40–43. Metal foils (110, 111), which act as conductors, connect to the electrodes. Thin plastic films (112, 113) insulate the winding from the metal foils. *See generally id.* at 7:43–51.

The patent teaches welding the metal foils to the housing halves with a laser (114) from

outside the housing. Each weld (115) is in a subregion of the bottom region or top region of the housing. The weld bead passes fully through the housing to the metal foils (110, 111), thereby forming an electrical connection between each metal foil and its respective housing half. *See generally id.* at 7:52–63.

The patent has two independent claims, and the disputed terms appear in each. Independent Claim 1, which is representative of independent Claim 11, recites:

1. A rechargeable *button cell* comprising:

a housing including metal housing halves separated from one another by an electrically insulating injection-molded seal or film seal, one of the housing halves including a planar bottom region and another housing half including a planar top region substantially parallel to the planar bottom region, the housing having a height-to-diameter ratio of less than one;

an electrode separator assembly comprising a positive electrode and a negative electrode disposed inside the housing, wherein the electrode separator assembly is in the form of a winding, end sides of the winding respectively facing in directions of the planar bottom region and the planar top region such that layers of the electrode separator assembly are oriented essentially orthogonally to the planar bottom region and the planar top region of the housing, the winding having a substantially centrally located axis and an open cavity extending along the axis interiorly of the winding, the open cavity having axially spaced opposite ends, the planar top and bottom regions of the housing each having a subregion, each subregion disposed both *radially and axially adjacent* one of the ends of the open cavity, the positive electrode and the negative electrode each including a current collector in the form of a metal foil or a metal mesh coated on both sides with active electrode material, and each of the current collectors comprises an uncoated section;

two metal foils functioning as conductors and electrically

connecting the positive and the negative electrode to the housing halves, *wherein both metal foils bear flat on an inner surface of the planar bottom region or the planar top region, one of the metal foils is attached by a weld to one of the uncoated sections and one of the planar bottom and top regions, another one of the metal foils is attached by a weld to another one of the uncoated sections and to another one of the planar bottom and top regions;* and

at least one insulator disposed to prevent direct electrical contact between one of the metal foil conductors and an adjacent one of the end sides of the electrode separator assembly,

wherein the *button cell* is configured as a secondary lithium ion cell, and the open cavity includes no winding core.

*Id.* at 9:2–46 (emphasis added); *see also id.* at 10:18–64 (Claim 11).

The parties dispute the scope of four claim terms or phrases, which are italicized in Claim 1 above. For two terms—“button cell” and “radially and axially adjacent”—the parties offer competing constructions. Defendants challenge the other two terms as indefinite.

## II. LEGAL STANDARDS

### A. Generally

“[T]he claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure-Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). As such, if the parties dispute the scope of the claims, the court must determine their meaning. *See, e.g., Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1317 (Fed. Cir. 2007); *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996), *aff’g*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc).

Claim construction, however, “is not an obligatory exercise in redundancy.” *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Rather, “[c]laim construction is a matter of [resolving] disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims . . . .” *Id.* A court need not “repeat or restate every claim term in order to comply with the ruling that claim construction is for the court.” *Id.*

When construing claims, “[t]here is a heavy presumption that claim terms are to be given their ordinary and customary meaning.” *Aventis Pharm. Inc. v. Amino Chems. Ltd.*, 715 F.3d 1363, 1373 (Fed. Cir. 2013) (citing *Phillips*, 415 F.3d at 1312–13). Courts must therefore “look to the words of the claims themselves . . . to define the scope of the patented invention.” *Id.* (citations omitted). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313. This “person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.*

Intrinsic evidence is the primary resource for claim construction. *See Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) (citing *Phillips*, 415 F.3d at 1312). For certain claim terms, “the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314; *see also Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005) (“We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history.”).

However, for claim terms with less-apparent meanings, courts consider “those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean[,] [including] the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Phillips*, 415 F.3d at 1314 (quoting *Innova*, 381 F.3d at 1116).

### **B. Indefiniteness**

“[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). “A patent must be precise enough to afford clear notice of what is claimed,” but that consideration must be made while accounting for the inherent limitations of language. *Id.* at 908–09. “Indefiniteness must be proven by clear and convincing evidence.” *Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

### **III. THE LEVEL OF ORDINARY SKILL IN THE ART**

The level of ordinary skill in the art is the skill level of a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In resolving the appropriate level of ordinary skill, courts consider the types of and solutions to problems encountered in the art, the speed of innovation, the sophistication of the technology, and the education of workers active in the field. *Id.* Importantly, “[a] person of ordinary skill in the art is also a person of ordinary creativity, not an automaton.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Here, only Defendants propose a level of ordinary skill in the art. Specifically, Defendants

contend that a skilled artisan would have held a “[b]achelor’s degree in mechanical engineering, or a similar field such as materials engineering, chemical engineering or physics with at least five years of experience in the field of battery development and manufacturing.” (Dkt. No. 65 at 4). Plaintiff does not dispute this definition of a skilled artisan. Accordingly, the Court adopts Defendants’ proposed level of skill in the art for purposes of claim construction.

#### **IV. THE DISPUTED TERMS**

##### **A. “button cell” (all claims)**

<b>Plaintiff’s Construction</b>	<b>Defendants’ Construction</b>
The preamble is limiting. Plain and ordinary meaning. Alternatively, “a small battery generally the size and shape of a button.”	The preamble is not limiting. To the extent the preamble is found to be limiting, “a small battery generally the size and shape of a button and having a height less than or equal to a diameter.”

This term appears in the preambles of all claims. Plaintiff contends that the term is limiting but requires no further construction. Defendants disagree that the term is limiting. Both parties provide alternative constructions for consideration.

###### *1. Whether the preamble is limiting*

Plaintiff contends that “button cell” in the preambles is limiting for three reasons. First, “a button cell” in the preamble provides antecedent basis for “the button cell” in the body of the claims. Dkt. No. 64 at 8. Second, the “pervasive use” of the term in the specification shows it limits claim scope. *Id.* at 9. Last, during prosecution of a related patent with the same disclosure, the applicant distinguished the invention over other battery types based on the structural properties of button cells. *Id.*

Defendants, on the other hand, dispute that the preambles are limiting. The claims,

Defendants argue, define a structurally complete invention without the preambles, and the phrase adds nothing to the structure of the claims. Dkt. No. 65 at 10. Defendants also dispute that the applicant relied on the phrase during prosecution to overcome prior art, suggesting instead that the applicant relied on an added limitation of the claim. *Id.* at 10; *see also id.* at 11 n.4.

Preambles may be limiting “[w]hen reciting additional structure or steps underscored as important by the specification[.]” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). For example, in *Gen. Elec. Co. v. Nintendo Co.*, 179 F.3d 1350, 1361–62 (Fed. Cir. 1999), the parties disputed whether the claims were limited to “raster scanned display devices,” as recited in the preamble, rather than display systems generally. The court concluded that:

[i]n light of the specification, to read the claim indiscriminately to cover all types of display systems would be divorced from reality. The invention so described is restricted to those display devices that work by displaying bits, which is not true with respect to all display systems recited in just the body of the claim. Thus, we conclude that the claim preamble in this instance does not merely state a purpose or intended use for the claimed structure. Rather, those words do give life and meaning and provide further positive limitations to the invention claimed.

*Id.* (internal quotations omitted).

The Court finds that same reasoning applies here. The ’506 Patent describes its disclosure as related to button cells rather than batteries generally. *See, e.g.*, ’506 Patent at 1:18–21 (indicating the disclosure “relates to button cells . . . and to a method for its production”). Similarly, the patent describes the problems to be solved as pertaining to prior-art button cells. *Id.* at 1:47–53 (explaining button cells without crimped housing halves might not withstand high stresses in the axial direction, especially from “axial mechanical loads which originate from inside the button cell”); *id.* at 1:59–2:23 (noting one way to address the problem of axial loading is with spiral-shaped

electrode windings, which tend to exert radial rather than axial forces, but this can disrupt the electrical contact of the electrode with the metal housing halves). As in *Gen. Elec. Co.*, to read the claim to cover all types of batteries—even those without the challenges associated with the manufacturing of button cells—would be “divorced from reality” given the importance assigned to the term by the specification. Accordingly, the Court holds that the preambles are limiting in that regard.

The prosecution history of related U.S. Patent No. 9,799,858, which shares the same disclosure as the ’506 Patent,<sup>2</sup> supports this conclusion. During prosecution of the ’858 Patent’s underlying application, the applicant explained:

Fig. 15 [of Saaski] does not show a button cell. It shows a cylindrical round cell. This interpretation is confirmed in Applicant’s substitute specification in para. [0029], wherein the general definition of a button cell is found. It is defined as having a ratio of height to diameter of preferably less than one. This is further confirmed by the attached definition from “Electropedia” (4/2004). This definition distinguishes the claimed button cell over the round cell shown in Fig. 15 of Saaski.

It is also well known that round cells regularly have (much) larger dimension than button cells. Therefore, generation of electrical contacts between different components of round cells, for example, of welding connections is much easier. For example, in Fig. 15 of Saaski, a massive metal nail 196 has to be connected to a housing part 178a. In comparison, the connectors of the Applicant’s button cell have a thickness of only a few micrometers. It is far more difficult to generate welding connections between connectors as shown, for example, in the Applicant’s FIG. 3A and the bottom of cup-shaped housing parts.

(Dkt. No. 64-8, ’858 Patent File History at 5–6). This language shows the applicant considered the structure of a button cell fundamentally different from cylindrical round cells.

In their response, Defendants contend this argument was directed to new claim language

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<sup>2</sup> U.S. Patent 9,799,858 issued from application serial no. 13/378,117. The ’506 Patent is based on application serial no. 15/433,654, which is a division of the ’117 application. ’506 Patent at [62].

limiting the height-to-diameter ratio to less than one. Dkt. No. 65 at 11 n.4. Although the applicant did amend Claim 1 of the pending application to include such a limitation, *id.* at 3, the paragraphs on which Plaintiff relies do not reference that amendment. For example, the applicant *could have* simply argued, based on the newly added claim language, that Saaski does not disclose a battery with a height-to-diameter ratio of less than one. Instead, the applicant focused on the inherent structural differences between button cells and cylindrical round cells, relying on both the specification and extrinsic evidence for support. As such, the Court disagrees that the applicant's arguments were based solely on the additional language added to Claim 1 limiting the height-to-diameter ratio.

## 2. *The proper construction of “button cell”*

The parties agree that a button cell is “a small battery generally the size and shape of a button.” Defendants further claim the proper construction requires limiting the height to less than or equal to the diameter. Plaintiff, however, criticizes this additional limitation as duplicative of language already found in some of the claims. (Dkt. No. 64 at 10–11). Relying on *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013 (Fed. Cir. 2017), Plaintiff also criticizes this additional language as unnecessary for resolving an infringement- or validity-related issue. *Id.* at 11.

The Court disagrees with Plaintiff on both points. Claims 1 and 11 limit the height-to-diameter ratio of the *housing* rather than the button cell. '506 Patent at 9:8–9 (Claim 1); *id.* at 10:24–25 (Claim 11).<sup>3</sup> However, even if there was precise overlap, “[t]he preference for giving meaning to all terms . . . is not an inflexible rule that supersedes all other principles of claim construction.”

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<sup>3</sup> Practically, of course, limiting the housing this way effectively limits the button cell similarly.

*SimpleAir, Inc. v. Sony Ericsson Mobile Commc'ns AB*, 820 F.3d 419, 429 (Fed. Cir. 2016). Here, not only does the prosecution history emphasize the structural characteristics of a button cell, the specification *defines* those characteristics. '506 Patent at 5:10–11 (“It is, however, important that the ratio of height to diameter is preferably *always* less than 1.” (emphasis added)).

Regarding *Nidec Motor*, which concerned an appeal of a PTAB *Inter Partes* Review decision, the court did not say construction of terms is not required unless there is a then-pending dispute about infringement or validity directly related to those terms. Rather, the appellate court simply stated terms need not be construed if the construction would not change the result. *Nidec Motor*, 868 F.3d at 1017. Here, the parties dispute the scope of “button cell,” which might later impact other aspects of this case. The Court thus finds that construction is appropriate.

\* \* \*

The Court concludes “button cell” in the preamble of the claims is limiting, and it will construe the term in line with the definition set forth by the disclosure. However, there is no support for Defendants’ notion that a button cell has a height-to-diameter ratio of exactly one. Accordingly, the Court construes “button cell” as “a small battery generally the size and shape of a button and having a height less than its diameter.”

#### B. “radially and axially adjacent” (Claims 1 and 11)

Plaintiff’s Construction	Defendants’ Construction
Plain and ordinary meaning. Alternatively, “next to or near.”	“between a lateral outer surface of the housing and”

This dispute relates to the position of top and bottom “subregions” defined by Claims 1 and 11. With respect to this disputed term, Claim 1 recites:

a housing including metal housing halves . . . , one of the housing halves including *a planar bottom region* and another housing half including *a planar top region* . . . ;

an electrode separator assembly . . . in the form of a winding, . . . the winding having a substantially centrally located axis and an open cavity extending along the axis interiorly of the winding, the open cavity having axially spaced opposite ends, *the planar top and bottom regions of the housing each having a subregion, each subregion disposed both radially and axially adjacent one of the ends of the open cavity* . . . ;

two metal foils functioning as conductors and electrically connecting the [electrode separator assembly] to the housing halves . . . ;

. . .

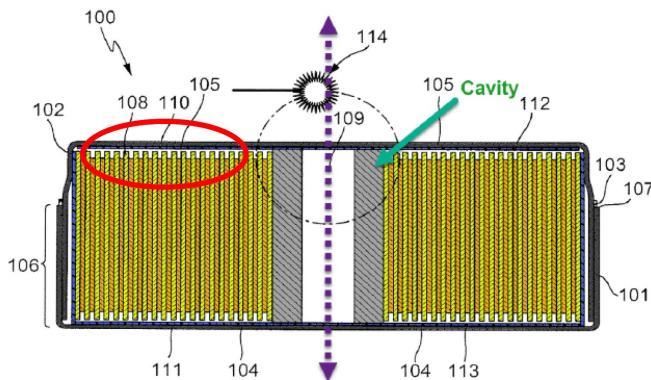
wherein . . . the open cavity includes no winding core.

'506 Patent at 9:3–46 (emphasis added); *see also id.* at 10:19–63 (reciting similar structure in Claim 11). To summarize this claim language, (1) the top and bottom housing halves have inner surfaces with planar inner regions; (2) the electrode separator assembly is a winding with an open cavity at its center having axially spaced opposite ends; (3) the planar inner regions each have a subregion disposed *both radially and axially adjacent one of the ends of the open cavity*; and (4) *unlike the embodiment shown in Figures 1A and 1B*, there is no winding core occupying the open cavity.

Claims 1 and 11 define these subregions to later specify, in certain dependent claims, the location of the welded connections between the housing halves and the metal foils. For example, Claim 3 requires that the metal foil, which connects one electrode to the lower housing, be welded to the bottom region of the bottom housing half. *Id.* at 9:50–53. Claim 4 then requires the welded connection of Claim 3 to be within the bottom subregion defined in Claim 1. *Id.* at 9:54–56; *see*

also *id.* at 11:1–7 (reciting similar limitations in Claims 13–14).

In essence, the parties dispute whether the recited subregions can overlap (*i.e.*, be within the radius of) the opposing ends of the open cavity. (Dkt. No. 65 at 25) (alleging that Plaintiff admits “[t]he subregion *cannot* overlap or be within the radius of the open cavity” (emphasis in original)); (Dkt. No. 68 at 9) (denying the alleged admission). For example, in the figure below from Defendants’ response brief, Defendants contend the top subregion must be somewhere in the red oval, whereas Plaintiff contends the subregion can be within the dashed circle.



'506 Patent, FIG. 1A

The '506 Patents disclosure references a “subregion” three times. First, in the Summary, the applicant explains:

In the housing of my button cell, such a cavity is delimited laterally by the winding and *on the end sides by the bottom or top region of the housing, respectively, or at least by a subregion thereof*. Particularly preferably, the at least one conductor is welded to one housing half or the housing halves in one of these subregions.

'506 Patent at 5:58–64 (emphasis added). Second, the patent explains the preference for welding *toward* the cavity to avoid damaging the winding:

[I]t is nevertheless possible that in certain cases the intensity of the laser will be selected to be too strong and the laser will penetrate through the housing wall and the conductor. For this reason, welding the conductors to the housing is *particularly preferably carried out in the subregion of the bottom or top region*, which delimits

the axial cavity at the center of the winding on the end side. If a laser beam penetrates through the housing in this region, the winding cannot be damaged. Instead, the laser beam will be absorbed by the housing half lying opposite or by a winding core optionally arranged inside the cavity.

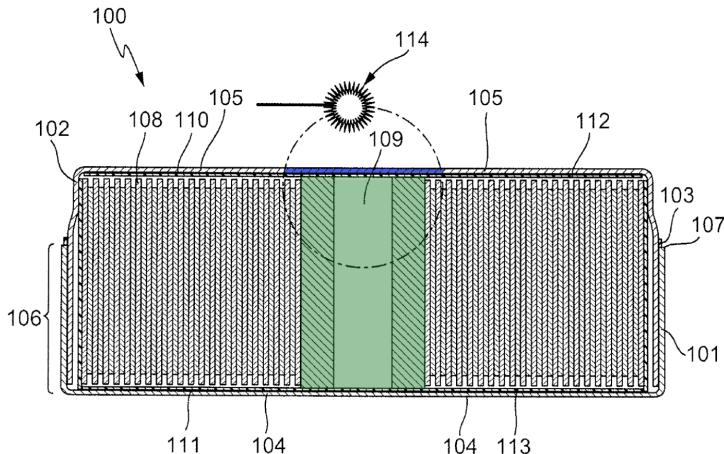
*Id.* at 6:60–7:5 (emphasis added). Third, the patent describes the subregion of Figures 1A and 1B:

Welding of the metal foils 110 and 111 [shown in FIG. 1], acting as conductors, to the respective housing half, which is preferably done by [a] laser 114, is preferably carried out in that subregion of the bottom region or of the top region of the button cell housing which delimits the axial cavity at the center of the winding on the end side.

*Id.* at 7:52–57. Importantly, the patent does not disclose any weld points between the metal foil and the housing halves that do *not* overlap the cavity ends.

The disclosure does not describe any subregions as “radially and axially adjacent” to anything, much less the end of the cavity. Nonetheless, these words have well-understood meanings, and neither party contends otherwise. *See, e.g.*, <https://www.yourdictionary.com/radially> (defining “radially” as “outward from a center”) (last visited Jan. 24, 2022); <https://www.yourdictionary.com/axially> (defining “axially” as “in the direction or line of the axis.”) (last visited Jan. 24, 2022); <https://www.yourdictionary.com/adjacent> (defining “adjacent” as “near or close”) (last visited Jan. 24, 2022).

Applying those meanings here, the Court disagrees that no portion of the “both radially and axially adjacent” subregions can overlap the open ends of the cavity. For example, a circular subregion with a center intersecting the cavity axis and having a diameter greater than that of the cavity open end would fall within the scope of the limitation, such as the inner surface of the housing section shaded blue below. (The cavity volume is shaded green.)



'506 Patent, FIG. 1A

The parties agree that the blue section is “axially adjacent” to the cavity end, and the dispute appears more focused on the meaning of “radially adjacent.” At the very least, the radially outermost part of the blue section—the part that extends radially beyond the cavity—is “radially adjacent” to the open end.

This understanding not only comports with the plain and ordinary meaning of the claim language, it is consistent with the specification, which only discloses welds connecting the housing top (102) to the metal foil (110) in this subregion. *See '506 Patent fig.1B, fig.4A, fig.4B, fig.5.* In contrast, Defendants’ construction would exclude all disclosed embodiments and run contrary to the patent’s teaching of welding toward the cavity to avoid damaging the winding.

This term will be given its plain and ordinary meaning. However, the Court rejects Defendants’ argument that no part of the recited subregion can overlap the open end of the cavity.

**C. “wherein both metal foils bear flat on an inner surface of the planar bottom region or the planar top region” (Claims 1 and 11)**

Defendants argue that this term is indefinite for two reasons. First, Defendants argue a skilled artisan would not understand “how the entire metal foil (acting as an output conductor) can bear flat on a planar region of either the top or bottom region.” (Dkt. No. 65 at 29). Second,

Defendants contend a skilled artisan would not understand how both metal foils can rest against a single inner surface. (*Id.* at 29–30).

The Court rejects Defendants' arguments and finds that the term is not indefinite. First, based on the specification, a skilled artisan would not understand that the *entire* metal foil must bear flat on an inner surface of a housing half. In fact, the '506 Patent discloses covering the side of the metal foil contacting the housing with insulating tape. '506 Patent fig.2B (item 209), fig. 2C (item 210), fig.3A (item 305), fig.3B (item 306). Defendants contend that reading this language to require that only a portion of the metal foil bear flat on the conductor imports limitations from the specification into the claims (Dkt. No. 65 at 29), but nothing in the disputed phrase requires all the metal foil to bear flat against an inner surface to meet this limitation. Notably, Defendants do not proffer any evidence showing a skilled artisan would understand the claim language that way.

Second, the disputed language does not require both metal foils to connect to the *same* inner surface. Rather, each metal foil must connect to the inner surface of one or the other of the bottom region or top region. The metal foils provide the electrical connection between the electrode layers and the housing halves. Thus, both metal foils connected to the same inner surface would not connect one of the electrodes to the housing, rendering the button cell useless as a battery. Defendants' understanding runs counter to how skilled artisan—someone “with at least five years of experience in the field of battery development and manufacturing” (Dkt. No. 65 at 4)—would understand the scope of the claim language in light of the specification. Accordingly, the Court holds that this term is not indefinite.

**D. “another one of the planar top and bottom regions” (Claims 1 and 11)**

Claims 1 and 11 require:

two metal foils functioning as conductors and electrically

connecting the positive and the negative electrode to the housing halves, . . . one of the metal foils is attached by *a weld* to one of the uncoated sections [of the electrode assembly] and one of the planar bottom and top regions, another one of the metal foils is attached by *a weld* to another one of the uncoated sections and to another one of the planar bottom and top regions[.]

'506 Patent at 9:30–39 (emphasis added); *see also id.* at 10:46–55 (Claim 11). Defendants suggest this language requires each weld must both (1) connect a metal foil to the uncoated section of an electrode and (2) connect the same metal foil to the housing. In other words, Defendants submit there are only two welds recited in the independent claims, with each weld connecting three elements: the uncoated section of an electrode; the corresponding conductor; and the corresponding housing half.

The Court rejects Defendants' arguments. Defendants' interpretation suggests welding along the metal foil continuously between the two disclosed connection points, which would serve no purpose and be difficult to accomplish. Rather, a skilled artisan reading the claims in light of the specification would more reasonably understand that "attached by a weld" simply means "welded." Thus, the claims could also be read as follows:

one of the metal foils is [welded] to one of the uncoated sections and one of the planar bottom and top regions, another one of the metal foils is [welded] to another one of the uncoated sections and to another one of the planar bottom and top regions.

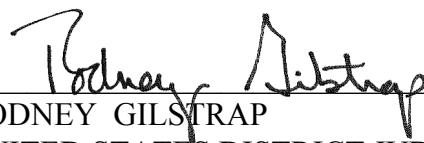
Notably, Defendants proffer no evidence that a skilled artisan would understand this language differently, or would not understand the scope of the claim language with reasonable certainty. Accordingly, the Court holds that this term is not indefinite.

## V. CONCLUSION

Term	The Court's Construction
“button cell” (preamble of all claims)	Limiting. “a small battery generally the size and shape of a button and having a height less than its diameter”
“radially and axially adjacent” (Claims 1 and 11)	Plain and ordinary meaning.
“wherein both metal foils bear flat on an inner surface of the planar bottom region or the planar top region” (Claims 1 and 11)	Not indefinite.
“another one of the planar top and bottom regions” (Claims 1 and 11)	Not indefinite.

The Court **ORDERS** each party not to refer, directly or indirectly, to its own or any other party’s claim construction positions in the presence of the jury. Likewise, the Court **ORDERS** the parties to refrain from mentioning any part of this Order, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

**So ORDERED and SIGNED this 25th day of January, 2022.**



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 RODNEY GILSTRAP  
 UNITED STATES DISTRICT JUDGE